METHODS OF USING CALL FOR SERVICE DATA IN AN ANALYTIC CAPACITY

CROSS-REFERENCE TO RELATED APPLICATIONS

This application is a 371 National Phase Application of United States Patent Cooperation Treaty Application No. PCT/US14/27128 filed on Mar. 14, 2014, which claims priority to U.S. Provisional Patent Application No. 61/785,217, filed on Mar. 14, 2013, the entire contents of which are incorporated by reference herein.

GOVERNMENT RIGHTS IN THE INVENTION

This invention was made with government support under Award Number 2009-SQ-B9-K010 made by the United States Department of Justice. The government has certain rights in the invention.

FIELD OF THE INVENTION

The present invention relates to computer-implemented methods and computer-readable storage media storing instructions to enhance access to data acquired in calls-for-service, such as "911" emergency calls in most of North America, "112" emergency calls in much of Europe, and "999" emergency calls in other countries, and other emergency and non-emergency calls.

BACKGROUND

As is the case in many facets of industry, education, government, and other institutions, computers have greatly facilitated the work of law enforcement agencies. For example, when a police officer witnesses an operator of a motor vehicle commit a traffic violation or for some other reason is suspicious of a motor vehicle, the officer can transmit the vehicle's license plate number to the officer's headquarters via radio, telephone, or a computer on-board the vehicle. Law enforcement computers can search criminal databases to determine if the car has been stolen, if the owner is the subject of an active arrest warrant, if the owner or suspected operator may pose a risk of harm to the officer or others. In addition, when police are able to collect fingerprints or secure an image of a person who was present at a crime scene (i.e., a photograph from a security camera or a drawing prepared by a police artist), law enforcement computers can seek persons with corresponding fingerprint records or facial recognition data to identify perpetrators or material witnesses. Such computer applications have provided a great benefit to law enforcement.

On the other hand, computers have not been used to their fullest advantage in all aspects of law enforcement. For example, when a call-for-service is received by police agencies, such as in the form of a 911 emergency call or a non-emergency call, the information provided by the caller and/or collected by the operator receiving the call is frequently entered directly into a computer system. The information recorded may include a time at which the call is received, a location from which the call is placed, and similar details about the context of the call. The operator receiving the call may assign a code to the call that the operator believes represents the nature of the call-for-service. Also, the operator may enter other information provided by the caller that provides some details about the circumstances of the call. For example, if the caller is

reporting disorderly conduct associated with an alcohol-related disturbance involving youth, relevant narrative may be entered describing the nature of the call. The data entered in the computer system may be used to dispatch appropriate personnel and/or to track how many such calls have been received.

However, call-for-service data arguably is underutilized by law enforcement agencies. While some of the data collected in structured fields of the data, such as the time of a call, the assigned code indicating the type of the reported offense may be processed to yield some reports, the totality of the information received in such calls may not be used to fully analyze the stored information to help in planning to respond to the incidence of crime or to attempt to decrease or prevent the incidence of crime. Analyzing the data may require manpower or computing resources that law enforcement agencies do not have or cannot afford.

Thus, it would be desirable to provide methods to enable workable affordable tools to enable law enforcement agencies to make better use of data collected from calls-for-service.

SUMMARY

The present disclosure relates to computer-implemented methods and computer-readable media for processing call-for-service data to facilitate queries and reports to enhance usefulness of call-for-service data. Call-for-service data is preprocessed to assign supplemental classifiers to the data. The supplemental classifiers may include range classifiers to associate calls with particular time blocks or ranges, such as late nights, early mornings, weekend nights, etc., to help analyze at which times and at which locations certain types of calls may be reported. In addition, supplemental classifiers may be assigned to categorize certain types of calls with certain types of behavior. For example, empirical study of narrative data (usually stored in unstructured fields) received in calls categorized as suspicious person calls may be determined to indicate a threat of one or more types of crimes relating to sale and distribution of drugs or other crimes against property or against persons; these calls may be assigned a supplemental classifier to reflect a potential risk of those crimes.

A simple free-text query on collected call-for-service data may not be efficient, practical, or yield the results one is expecting. Such studies may require computing resources or manpower that local law enforcement agencies do not possess. By contrast, queries on the supplemental classifiers generated in pre-processing data as previously described may be used in concert with crime incident data to enable more thorough and meaningful analysis of the call-for-service data that may be used to predict and prevent future crimes and injurious behavior.

According to an embodiment of the present disclosure, a computer-implemented method performable by a computer system includes receiving at a computer system data for a plurality of calls-for-service. Individual data for an individual call-for-service includes one or more fields storing information relating to the call-for-service. Based on the information stored within the one or more fields of the individual data, one or more supplemental classifiers are automatically identified. The one or more supplemental classifiers are associated with the individual data. The one or more supplemental classifiers associated with the individual data enable the individual call-for-service to be identified when the one or more supplemental classifiers match one or more specified criteria.